AMENDED CLAIMS
[received by the International Bureau on 28 May 2004 (28.05.04);
original claims 1-17 replaced by new claims 1-17 (3 pages)]

1. A filamentous fungus transformed with a heterologous sequence of DNA, the fungus being capable of expressing the heterologous DNA, characterised in that the heterologous DNA is under the control of a filamentous fungus transcription promoter which is active substantially only during development of the fruiting body of the fungus and which is up-regulated during development of the fruiting body, between the button stage and the veil-break stage.

2. A fungus according to claim 1, wherein the promoter is active substantially only from veil-break onwards during the development of the fruiting body of the fungus.

3. A fungus according to claim 1 or 2, wherein the promoter is active substantially only during stages 4 to 7 of the development of the fruiting body of the fungus.

4. A fungus according to any preceding claim, which is *A. bisporus*.

5. A fungus according to any preceding claim, wherein the promoter is obtainable from the cDNA sequence of SEQ. ID NO. 11.

6. A fungus according to any of claims 1 or 4, wherein the promoter comprises the sequence of SEQ ID NO 12, or a mutation or variant thereof, or a sequence which hybridises thereto under conditions of at least 60% stringency.

7. A fungus according to any of claims 1 or 4, wherein the promoter comprises the sequence of SEQ ID NO 13, or a mutation or variant thereof, or a sequence which hybridises thereto under conditions of at least 60% stringency.

8. A fungus according to any preceding claim, wherein the DNA is operably linked with a terminator comprising the sequence of SEQ ID NO 35, or a mutation or variant thereof, or a sequence which hybridises thereto under conditions of at least 60% stringency.

9. A fungus according to any preceding claim, wherein the DNA is operably linked with a terminator comprising the sequence of SEQ ID NO 36, or a mutation or variant thereof, or a sequence which hybridises thereto under conditions of at least 60% stringency.

10. A fungus according to claim 1, wherein the DNA is operably linked with a promoter comprising the sequence of SEQ ID NO. 12 and a terminator comprising the sequence of SEQ ID NO 35, or a mutation or variant of either, or a sequence which hybridises thereto under conditions of at least 60% stringency.

11. A fungus according to claim 1, wherein the DNA is operably linked with a promoter comprising the sequence of SEQ ID NO. 13 and a terminator comprising the sequence of SEQ ID NO 36, or a mutation or variant of either, or a sequence which hybridises thereto under conditions of at least 60% stringency.

12. A fungus according to any preceding claim, wherein a selectable marker is linked with the heterologous DNA.

13. A fungus according to any preceding claim, wherein the heterologous DNA is native DNA.

14. A fungus according to any preceding claim, wherein the heterologous DNA is selected such as to affect characteristics of mushroom crop production.

15. A fungus according to any preceding claim, wherein the heterologous DNA encodes: antibodies, including other diagnostic material; secondary metabolites, such as lectins, pesticidal compounds such as *Bacillus thuringiensis* toxin (Bt toxin); therapeutic compounds such as vaccines, steroids, heterocyclic organic compounds; biological macromolecules, such as interferon, endostatin and insulin; and medical enzymes, such as thrombolytics and cerebrosidases.

16. A method for the production of a substance expressible by a DNA sequence, wherein the sequence is operably associated with a filamentous fungus transcription promoter as defined in any preceding claim, the sequence and promoter being

expressibly incorporated in a filamentous fungus, the fungus being cultured to fruition and the product being harvested.

17. A method for the production of a substance expressible by a DNA sequence, wherein the sequence is operably associated with a filamentous fungus transcription promoter as defined in any of claims 1 to 15, the sequence and promoter being expressibly incorporated in a filamentous fungus, the fungus being cultured to fruition and the product being harvested, and wherein the DNA and/or fungus is as defined in any of claims 1 to 15.